

**Montana Board of Oil and Gas Conservation
Environmental Assessment**

Operator: Continental Resources, Inc.
Well Name/Number: Barbara 4-28H
Location: SE SW Section 28 T25N R55E
County: Richland, **MT; Field (or Wildcat)** W/C (Bakken Horizontal)

Air Quality

(possible concerns)
Long drilling time no, 50 to 60 days drilling time.
Unusually deep drilling (high horsepower rig) no, 19,771'MD/9,912'TVD, single lateral in the Bakken formation.
Possible H2S gas production slight
In/near Class I air quality area no
Air quality permit for flaring/venting (if productive) Yes, DEQ air quality permit required under 75-2-211.
Mitigation:
☒ Air quality permit (AQB review)
☒ Gas plants/pipelines available for sour gas
☐ Special equipment/procedures requirements
☐ Other: _____
Comments: no special concerns – using triple rig to drill to Bakken lateral

Water Quality

(possible concerns)
Salt/oil based mud yes, freshwater and freshwater mud system on surface hole and oil based saltwater mud system on mainhole. Saltwater for horizontal sections.
High water table no
Surface drainage leads to live water Yes, small unnamed ephemeral tributary drainage to East Charlie Creek, about 1/8 of a mile east of this location.
Water well contamination no, closest water well is about 1/2 mile to the northeast and is 215' in depth. Surface hole will be drilled with freshwater and freshwater muds. Surface casing will be cemented to surface from a depth of 1590'.
Porous/permeable soils no, sandy silty bentonitic soils
Class I stream drainage no
Mitigation:
☒ Lined reserve pit
☒ Adequate surface casing
☐ Berms/dykes, re-routed drainage
☐ Closed mud system
☐ Off-site disposal of solids/liquids (in approved facility)
☐ Other: _____
Comments: 1590' of surface casing cemented to surface adequate to protect freshwater zones.

Soils/Vegetation/Land Use

(possible concerns)
Steam crossings no, crossings.

High erosion potential No moderate cut, up to 17.5' and moderate fill, up to 15.5', required.

Loss of soil productivity no, location will be restored after drilling, if nonproductive. If productive unused portion of drillsite will be reclaimed.

Unusually large wellsite no, 500'X400' location size required.

Damage to improvements Slight

Conflict with existing land use/values Slight

Mitigation

☐ Avoid improvements (topographic tolerance)

☐ Exception location requested

☒ Stockpile topsoil

☐ Stream Crossing Permit (other agency review)

☒ Reclaim unused part of wellsite if productive

☐ Special construction methods to enhance reclamation

☒ Other If well is successful, stabilize fill and cut slopes with vegetation.

Comments: Access will use existing state highway, #201, county road #330 and an existing oilfield well access road. New constructed road, about 1 mile into location. Drill cuttings will be disposed of in the lined reserve pit. Drilling fluids will be recycled. Completion fluids will be trucked to a commercial Class II for disposal. Pit will be backfilled after remaining fluids have evaporated. No special concerns

Health Hazards/Noise

(possible concerns)

Proximity to public facilities/residences None nearby, closest residence is over 2 miles away.

Possibility of H2S slight

Size of rig/length of drilling time Triple drilling rig/short 50 to 60 days drilling time

Mitigation:

☒ Proper BOP equipment

☐ Topographic sound barriers

☐ H2S contingency and/or evacuation plan

☐ Special equipment/procedures requirements

☐ Other: _____

Comments: no concerns

Wildlife/recreation

(possible concerns)

Proximity to sensitive wildlife areas (DFWP identified) n/a None identified.

Proximity to recreation sites no

Creation of new access to wildlife habitat no

Conflict with game range/refuge management no

Threatened or endangered Species no

Mitigation:

☐ Avoidance (topographic tolerance/exception)

☐ Other agency review (DFWP, federal agencies, DSL)

☐ Screening/fencing of pits, drillsite

☐ Other: _____

Comments: no concerns

Historical/Cultural/Paleontological

(possible concerns)

Proximity to known sites None identified

Mitigation

avoidance (topographic tolerance, location exception)

other agency review (SHPO, DSL, federal agencies)

Other:

Comments: on private land

Social/Economic

(possible concerns)

Substantial effect on tax base

Create demand for new governmental services

Population increase or relocation

Comments: no concerns

Remarks or Special Concerns for this site

Well is a single lateral Bakken Formation test. This is the fourth well in this spacing unit.

Summary: Evaluation of Impacts and Cumulative effects

No long term impacts expected. Some short term surface impacts will occur.

I conclude that the approval of the subject Notice of Intent to Drill (does/**does not**) constitute a major action of state government significantly affecting the quality of the human environment, and (does/**does not**) require the preparation of an environmental impact statement.

Prepared by (BOGC): Thomas P. Richmond

(title:) Administrator

Date: September 19, 2013

Other Persons Contacted:

Montana Cadastral Website
(Name and Agency)

Ownership, aerial photo
(subject discussed)

September 19, 2013
(date)

Montana Bureau of Mines and Geology, GWIC
website

(Name and Agency)

Richland County water wells

(subject discussed)

March 2, 2007 for previous

permit

(date))

If location was inspected before permit approval:

Inspection date: _____

Inspector: _____

Others present during inspection: _____